

ABSTRACT OF THE DISCLOSURE

An electron beam exposure apparatus for exposing a pattern on a wafer by an electron beam. The electron beam exposure apparatus includes: an electron beam generating section for generating the electron beam; a deflecting section for deflecting the electron beam in order to apply the electron beam to a desired position on the wafer; a wafer stage on which the wafer is mounted; a stage position measuring section for measuring position of the wafer stage at a first time point and at a second time point which is later than the first time point; a stage speed computing section for computing moving speed of the wafer stage based on the position of the wafer stage at the first time point and the position of the wafer stage at the second time point measured by the stage position measuring section; and a deflection amount correction section for computing position of the wafer stage at exposure time based on the moving speed of the wafer stage measured by the stage speed computing section, and for controlling deflection amount of the electron beam to be deflected by the deflecting section at the exposure time. The electron beam exposure apparatus improves throughput and exposure accuracy of the exposure processing.